



## Draft Battery Swapping Policy for Electric Vehicles

**For Prelims:** Battery Swapping, NITI Aayog, Government Schemes for EV Promotion

**For Mains:** Draft Battery Swapping Policy for Electric Vehicles, Net-zero target by 2070

### Why in News?

Recently, the [NITI Aayog](#) released the **draft battery swapping policy for [Electric Vehicles \(EVs\)](#)** in the country.

- The policy aims to **improve the efficiency of the battery swapping ecosystem** for electric scooters and three-wheeler electric rickshaws, thereby driving EV adoption.
- As per the draft policy, **all metropolitan cities with a population above 40 lakhs will be prioritized** for the development of a battery swapping network under the first phase.

### What is Battery Swapping?

- **Battery swapping is a mechanism** that involves exchanging discharged batteries for charged ones.
- This provides the flexibility to **charge these batteries separately** and keeps the vehicle in operational mode with negligible downtime.
- Battery swapping is generally used for smaller vehicles such as **two-wheelers and three-wheelers with smaller batteries** that are easier to swap, compared to four-wheelers and e-buses, although solutions are emerging for these larger segments as well.

### What are the key points of the draft Policy?

- **About:** As per the draft policy, battery swapping will **fall under the Battery-as-a-Service (BaaS) business model**, and such models would have to **ensure interoperability between EVs and batteries** for a successful mainstreaming of battery swapping as an alternative.
- **Objectives:**
  - **Minimum Technical Standards:** This Policy stipulates the **minimum technical and operational requirements** that battery swapping ecosystems would need to fulfil, to enable effective, efficient, reliable, safe, and customer-friendly implementation of battery-swapping infrastructure.
  - **Financial Support:** Providing direct and indirect financial support **to Battery Providers** (for the cost of batteries) and EV users.
  - **Lowering Taxes:** The draft policy has suggested that the [Goods & Services Tax Council](#) considers reducing the differential across the tax rates on [Lithium-ion batteries](#) and electric vehicle supply equipment.
    - Currently, the tax rate on the former is 18% and 5% on the latter.

- **Unique Identification Number:** The policy also proposes to assign a **Unique Identification Number (UIN)** to swappable batteries at the manufacturing stage to help track and monitor them.
- **Nodal Agency:** The **Bureau of Energy Efficiency (BEE)** is the Central Nodal Agency responsible for the rollout of EV public charging infrastructure and will be responsible for the implementation of battery swapping networks across the country.

## What is the Need for the Policy?

- EVs are traditionally purchased with “fixed” batteries which can only be charged using the power supply while housed within the EV.
- Like fueling stations for conventional vehicles, adequate, affordable, accessible, and **reliable charging networks are a prerequisite for mass EV adoption.**
- Efforts are underway in India to boost the availability of charging infrastructure
- However, **developing charging infrastructure still takes a significantly longer time** and there is a constraint of space in urban areas.
- Therefore, the Government of India in **Budget speech 2022-23** had announced that the Centre would be introducing a battery swapping policy and interoperability standards in order to improve efficiency in the EV ecosystem.

## What is the Significance of the Policy?

- **Decarbonizing Transport Sector:** India is a signatory to the **United Nations Framework Convention on Climate Change (UNFCCC)**, which was signed in 2021.
  - Under the mandate, India is committed to achieving a net-zero target by 2070.
  - To decarbonize transport, the transition to clean mobility, led by electric vehicles (EVs), is paramount.
  - The road transport sector is one of the major contributors to carbon emissions and forms nearly 33% of the particulate matter emissions.
- **Leveraging EV Market:** The overall Indian EV market was pegged at USD 1,434.04 Billion in 2021 and is expected to grow to USD 15,397.19 Billion by 2027 at a CAGR of 47.09%.

## What are Related Government Schemes for EV Promotion?

- The government had launched the **Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicles (FAME) scheme** in 2015 to give a push to EVs and hybrid vehicles.
- Apart from that, it also approved the **Production Linked Incentive (PLI) scheme** for manufacturing **Advanced Chemistry Cell (ACC)** batteries in 2021.
- Another PLI Scheme, which also covers EV startups, was also approved for the automotive sector with a budgetary outlay.

**Source: IE**